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Florida Agricultural Experiment Station

SCALY BARK

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Scaly bark, or "nail-head rust," as it is often called, is a fungus disease affecting sweet orange trees, especially in Hillsboro county. Although it is only found as yet in a few places outside this county, it is likely to spread to other parts of the State, since it has been proved to be an infectious trouble. The grower should therefore be on the watch for its appearance. Only rarely does it seriously affect any other variety of citrus than the sweet orange. Quite often cases of gummosis are mistaken for this disease. If the grower is in doubt, he should send specimens to the Experiment Station for identification.

Those who did not head back their diseased trees and treat them with carbolineum in January, or did not top-work them to other varieties as suggested in bulletin 98, may use the Bordeaux treatment in April with a fair degree of success.

Spraying With Bordeaux Mixture

In a series of experiments on the treatment of scaly bark, extending over three years, it was found that spraying with Bordeaux mixture, at almost any time of the year, was quite effective in keeping the spots from the branches and fruit. This spraying was attended with the best results when the dead branches and badly diseased limbs had been previously pruned out. The month of April appeared to be a good time to spray. As the diseased spots and scabs are located almost entirely on the branches, large limbs, and trunk, and not on the leaves, care should be taken to spray the interior of the tree thoroughly. Spraying should be done so as to cover the trunk and larger limbs, and also the entire surface of the wood out to the smallest twigs. If the spray is thrown on from the outside, most of it will be caught by the leaves, and but little good will result.

Effects of Bordeaux Mixture

It is taken for granted in suggesting this treatment that the grower already knows quite well the effect of this mixture in allowing an increase of scale insects, and that he uses it with a full knowledge of this danger. No one is advised to use the Bordeaux, unless the progress of the disease makes it necessary. Such increase of scale insects is due to the parasitic fungi that

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keep them in control being killed by the Bordeaux mixture. This increase may be prevented in part, either by the use of a good insecticide, or by hanging into the sprayed trees, two or three weeks after spraying, pieces of branches bearing the beneficial fungi.

Description of the Disease

The bark of the trunk and the bark of branches of all sizes becomes spotted and scabby, while on the fruit there appear ringed or circular spots known as nail-head rust spots. The spots on the small limbs and branches are more or less circular or oval. They vary in size from one-sixth to one inch in diameter, are raised above the surface of the bark, rusty or brown in color, and have well defined margins. The bark becomes brittle, cracks, and forms flakes or scales. These spots, which are at first scattered, may increase in number to such an extent as to become joined together, and present the characteristic scaly appearance. On the rind of the fruit, the spots start either as rings or as round yellowish areas, in July or August. As the fruit approaches maturity, the rings become sunken and brown. Fruits spotted with the nail-head rust color prematurely, and drop before the picking season.

Distinction From Gummosis

The name scaly bark is often used erroneously for the disease of gummosis, one stage of which looks almost identical with scaly bark. Scaly bark develops on all parts of the tree, from the trunk to the smallest twigs, while gummosis affects only the trunk and larger limbs. Scaly bark appears as round or oval "nail-head rust" spots on the small branches and fruit, while gummosis does not. Scaly bark often has the same scaly appearance on the trunk and larger limbs as does gummosis, but it lacks the large amount of gum.

Cause of Scaly Bark

This disease has been found, after a long investigation, to be due to the combined effects of two different fungi: one a minute fungus growth that makes its way through the epidermis and grows only into the outermost cells of the bark; and the other, the withertip fungus, which enters at the wounds and does the greater part of the damage.

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